APPLICATION NO. 10/716655

June 1, 2005

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CLMPTO

1. (Original) An apparatus comprising:

a thinned active semiconductor substrate;

a support substrate for supporting the thinned active semiconductor substrate; and

a magnetically permeable glue disposed between the active semiconductor substrate and the support substrate.

2. (Original) The apparatus of claim 1 wherein the support substrate is magnetically permeable.

3. (Original) The apparatus of claim 2 wherein the support substrate and the glue each comprise a magnetically permeable substance, the magnetically permeable substance comprising at least one of the group consisting of cobalt; nickel and iron.

4. (Currently Amended) The apparatus of claim 3 wherein the support substrate comprises:

a first layer having a coefficient of thermal expansion substantially equal to the ~~integrated~~ circuit thinned active semiconductor substrate, the first layer being in contact with the glue; and

a second layer coupled to the first layer, the second layer comprising the magnetically permeable substance.

5. (Original) The apparatus of claim 3 wherein the active semiconductor substrate comprises a magnetoresistive random access memory.

6. (Original) The apparatus of claim 1 wherein the glue comprises:

a bonding agent; and

a magnetic permeability enhancing agent.

7. (Original) The apparatus of claim 6 wherein the bonding agent comprises one of the group consisting of benzocyclobutene (BCB) and an epoxy.

8. (Original) The apparatus of claim 6 wherein the magnetically permeable enhancing agent comprises at least one of the group consisting of cobalt, nickel and iron.

9. (Original) The apparatus of claim 6 wherein the magnetic permeability enhancing agent comprises a plurality of magnetically-permeable, colloidal-sized particles suspended in the bonding agent.

10. (Original) The apparatus of claim 9 wherein the glue has a first thickness and the particles have an average maximum dimension not substantially greater than half the first thickness.

11. (Original) The apparatus of claim 9 wherein the active semiconductor substrate has a thickness of less than 200 microns.

12. (Previously Presented) An apparatus comprising:

a thinned integrated circuit wafer;

a support wafer being magnetically permeable and comprising at least one of the group consisting of cobalt, nickel, and iron; and

a glue being magnetically permeable, the glue being disposed between the integrated circuit wafer and the support wafer and comprising at least one of the group consisting of cobalt, nickel, and iron.

13. (Original) The apparatus of claim 12 wherein the integrated circuit wafer comprises a plurality of the integrated circuits.

14. (Currently Amended) The apparatus of claim 13 wherein the apparatus comprises a three-dimensional wafer-to-wafer bonded structure including the integrated circuits, the ~~substrate~~ support wafer and the glue.

15. (Previously Presented) The apparatus of claim 12 wherein the glue comprises:

a bonding agent; and

an agent that enhances magnetic permeability.

16. (original) The apparatus of claim 15 wherein the bonding agent comprises one of the group consisting of benzocyclobutene (BCB) and an epoxy.

17. (Previously Presented) An apparatus comprising:

a thinned integrated circuit wafer;

a support wafer having a first characteristic, the first characteristic being at least one of the group consisting of thermally conductive, electrically conductive and magnetically permeable; and

a glue having the first characteristic, the glue being disposed between the integrated circuit wafer and the support wafer;

wherein the glue comprises:

a bonding agent; and

a first characteristic enhancing agent;

wherein the first characteristic enhancing agent comprises a plurality of colloidal-sized particles suspended in the bonding agent, the colloidal particles being monolithic and coated nanosilica spheres.

18. (Original) The apparatus of claim 12 wherein the glue has a first thickness and the particles have an average maximum dimension not substantially greater than half the first thickness.

19. (Canceled)

20. (Currently Amended) The apparatus of claim 12 wherein the support wafer comprises:

a first layer having a coefficient of thermal expansion substantially equal to the thinned integrated circuit wafer, the first layer having the first surface; and

a second layer comprising the magnetically permeable substance.

21. (Currently Amended) The apparatus of claim 12 wherein the integrated circuit ~~is~~ wafer comprises a magnetic memory.

22. (Original) The apparatus of claim 12 wherein the substrate comprises one of the group consisting of silicon carbide and heavily doped silicon.

CLAIMS 23-35 (CANCELLED)